REMARKS

The Office Action of December 7, 2004 and the references cited therein have been carefully studied. Reconsideration and allowance of this application are earnestly solicited.

The present invention is directed to a method as well as a system for noise reduction or removal in the presence of a speech or other information signal. It is desired to reduce or remove the noise while preserving the speech or other information signal. To accomplish this end, the present invention uses a non-Gaussian distribution function model directed to the information signal. The non-Gaussian distribution function model of the information signal is dynamically updated during processing.

The Examiner rejected claims 1-14 based upon the teachings of an article authored by Simon J. Godsill. Additionally, the Examiner included U.S. Patent 6,349,278 to Krasny et al. as a secondary reference for the rejection of several claims. This rejection is respectfully traversed.

It is noted that claims 1-14 were included in the present application as filed. However, applicant, on March 8, 2002, filed a Preliminary Amendment, which included a "marked-up" specification as well as cancelling claims 1-14 and adding claims 15-39. Therefore, our response to this Office Action is directed to the difference between the two references cited by the Examiner in the Office Action of December 7, 2004 with respect to claims 15-39.

Claims 15-39 are directed to a system and method of extracting an information signal from an input signal containing both the information signal, as well as noise. Claim 15 is directed to a method in which a non-Gaussian distribution function model for the information signal is estimated. The input signal is decomposed into multiple spectral bands and the non-Gaussian distribution function model for the information signal is dynamically updated. A gain function is produced for each of the spectral bands and this gain function is applied for each of the spectral bands to the input signal spectral bands to produce

estimated information signal components for each of the spectral bands. The estimated information signal components for all of the spectral bands are combined to produce an estimate of the information signal with reduced noise. Claim 33 recites a system for extracting an information signal from the input signal which includes a means for estimating the non-Gaussian distribution function model, a means for decomposing the input signal into multiple spectral bands, a means for dynamically updating the non-Gaussian distribution function model for the information signal, a means for producing a gain function for each of the spectral bands, a means for applying the gain function to each of the spectral bands to the input signal spectral band to produce estimated information signal components for each of the spectral bands and a means for combining the estimated information signal components for all of the spectral bands to produce an estimate of the information signal with reduced noise. All of the additional claims in this application either depend from method claim 15 or from system claim 33.

It is noted that all of the claims in this application either directly or indirectly recite a system or method utilizing a non-Gaussian distribution function model for the information signal. This is in contradistinction with the Godsill article, which utilizes a non-Gaussian model for the noise signal and dynamically updates the noise model during processing. Godsill assumes that the information signal can be accurately modeled using an auto-regressive moving average model. However, it does not dynamically update the information signal as disclosed. This is in some ways similar to the admitted prior art in the instant application where it is indicated that a model of Gaussian statistics is often acceptable for noise, but is not generally a good model for speech or other signals to be recovered from the noise. Consequently, it is believed that since all of the claims of the present invention are specifically directed to a system or method in which a non-Gaussian distribution function model for the information signal is estimated and then dynamically updated, it is

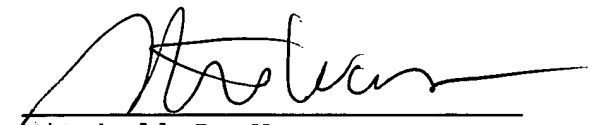
believed that the present invention is not anticipated or suggested by the Godsill reference.

Additionally, it is noted that the inclusion of the Krasny et al. reference does not suggest the teaching of the present invention as claimed. It is noted that columns 5 and 6 of the Krasny et al. reference teach a step of updating the power spectral density of a received signal x(k) which in turn is updated. It is further noted that x(k) is the combination of the audio signal and the noise signal. This is contrary to the teachings as recited in all of the claims of the present invention in which a non-Gaussian distribution function model is used for the information signal and not for a noise signal or a combination of an information signal and noise signal. Therefore, it is believed that the inclusion of the Krasny et al. reference directed to claims 15-39, when used in combination with the Godsill reference, would not suggest the teachings of the present invention as currently claimed.

Therefore, reconsideration and allowance of this application are earnestly solicited.

A one month extension of time accompanies this Amendment, along with a check for the required fee. If any additional fees are due and owing, please charge Deposit Account No. 08-2455 the deficiency.

Respectfully submitted,



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